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P.O. Box 272400
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PATENT APPLICATION

ATTORNEY DOCKET NO. ____10018003-1____

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s):   Jian Fan

Application No.: 10/044,558

Filing Date: January 11, 2002

Confirmation No.: 9516

Examiner: Brian Q. Lo

Group Art Unit: 2624

Title: TEXT EXTRACTION AND ITS APPLICATION TO COMPOUND DOCUMENT IMAGE COMPRESSION

Mail Stop Appeal Brief - Patents
Commissioner For Patents
PO Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL OF REPLY BRIEF

Transmitted herewith is the Reply Brief with respect to the Examiner's Answer mailed on ____April 2, 2008____.

This Reply Brief is being filed pursuant to 37 CFR 1.193(b) within two months of the date of the Examiner's Answer.

(Note: Extensions of time are not allowed under 37 CFR 1.136(a))

(Note: Failure to file a Reply Brief will result in dismissal of the Appeal as to the claims made subject to an expressly stated new ground rejection.)

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Respectfully submitted,
Jian Fan

By
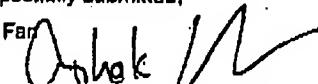
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         IMAGE COMPRESSION

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REPLY BRIEF - PATENTS

Sir:

The Appellants respectfully submit this Reply Brief in response to the Examiner's
Answer mailed on April 2, 2008, and thus this Reply Brief is timely filed within two months of
the Examiner's Answer.   This Reply Brief includes remarks concerning the rejection of claims
1-3, 6, and 23-26 under 35 USC § 102(b) as allegedly being anticipated by Lee et al. U.S. Patent
No. 5,583,659 ("Lee"). The remarks are in response to the Response to Arguments section on
pages 8-11 of the Examiner's Answer.

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Arguments

Claims 1-3, 6, and 23-26 were rejected under 35 USC § 102(b) as being anticipated by Lee. The rejection should be reversed because Lee clearly fails to teach all the claimed features.

The Response to Arguments section on pages 8-11 of the Examiner's Answer more clearly identifies some of the features of Lee the Examiner is relying upon to teach the claimed features. The arguments below are mostly in response to Examiner's remarks on pages 8-11 of the Examiner's Answer.

Claim 1 recites,

performing edge-bounded averaging to determine line segments, wherein the edge-bounded averaging includes finding one of either

an average value of only the edge pixels having connectivity with pixel (i,j), in response to determining that pixel (i,j) is an edge pixel or

an average value of only the non-edge pixels having connectivity with pixel (i,j) in response to determining that pixel (i,j) is a non-edge pixel.

The rejection asserts Lee discloses performing edge-bound averaging to determine an average value of only the edge pixels having connectivity with pixel (i,j), in response to determining that pixel (i,j) is an edge pixel. In particular, the Examiner, on pages 8-9 of the Answer, asserts that column 8, lines 34-43 of Lee discloses determining the average value. In bold, the Examiner cites lines 39-41 of column 8 as allegedly teaching a calculation of average value for only edge pixels having connectivity.

As the Examiner highlighted in bold to teach the claimed average value, lines 39-41 disclose calculating an average pixel intensity value, L_{avg}. However, the Examiner appears to

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ignore that lines 40-41 specifically disclose calculating the average pixel intensity value, L_{avg}, occurring within an N-by-N pixel window centered about pixel (i,j). Thus, the average pixel intensity value, L_{avg}, is calculated from a window of pixels and is the average for all the pixels in the window. Column 4, lines 29-30 specifically discloses average intensity values for the entire N-by-N pixel window. Thus, the average pixel intensity value, L_{avg}, is the average intensity value for each pixel in the window. Furthermore, and most importantly, Lee does not disclose the N-by-N window only includes edge pixels, and thus, Lee fails to teach determining an average value of only edge pixels.

Calculating L_{avg} is further described in column 10, lines 37-50. L_{avg}, is determined from the L_{min} and L_{max} of all the N-by-N pixels in the window. L_{avg} is the average for each of the pixels in the N-by-N window, some of which may not be edge pixels. Examples of the N-by-N windows are shown in figures 3B and 3C of Lee, and some of the pixels in the window could easily be non-edge pixels.

Furthermore, claim 1 recites, "an average value of only the edge pixels having connectivity with pixel (i,j), in response to determining that pixel (i,j) is an edge pixel." Lee fails to teach determining an average value only for edge pixels having a connectivity with pixel (i,j). Firstly, as described above, the average value L_{avg} is determined for all pixels in a window. Some of those pixels may not be edge pixels, and thus cannot be edge pixels connected to the center edge pixel (i,j) of the window of Lee. Secondly, Lee discloses determining L_{avg} for a window whenever an area gradient GS(i,j) exceeds a threshold GT. After determining GS(i,j)

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exceeds a threshold GT, there is no additional determination made as to whether the pixel is connected to an edge pixel (i,j). Instead, the pixels may not be connected.

On page 9 of the Examiner's Answer, the Examiner alleges,

> Lee clearly teaches a determining of whether the pixels having connectivity are edge pixels or non-edge pixels (to determine of whether pixels are associated with an area gradient such as edge or non-edge)(column 4, lines 22-33).

Column 4, lines 22-33 discloses determining whether a pixel is near an edge or not. The Examiner appears to be alleging that because Lee discloses determining whether a pixel is near an edge or not, Lee discloses calculating an average value of only the edge pixels <u>having connectivity with edge pixel (i,j)</u>. Clearly, Lee fails to teach a determination as to whether a pixel determined to be near an edge is connected to another edge pixel. One edge pixel may be for a completely different edge than an edge for another edge pixel.

Finally, Lee fails to teach performing edge-bounded averaging to determine line segments. The Examiner cites to column 5, line 60-column 6, line 2 as teaching this feature. However, Lee discloses thresholding scanned documents containing line art that could be graphs, maps, characters and line drawings. Lee fails to teach identifying a line segment. The graphs, maps, characters and line drawings appear to be complete lines. Nothing in Lee discloses performing edge-bound averaging to determine a line segment rather than a complete line.

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Conclusion

For at least the reasons given above, the rejection of claims 1, 3-29, 31-33 and 35 is

improper. Accordingly, it is respectfully requested that such a rejection by the examiner be reversed

and these claims be allowed.

Respectfully submitted,

Dated: June 2, 2008   By _____

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